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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,940	03/27/2001	Fabrizio Rovati	851763.405	2964
500	7590	10/05/2004	EXAMINER	
SEED INTELLECTUAL PROPERTY LAW GROUP PLLC			DIEP, NHON THANH	
701 FIFTH AVE			ART UNIT	
SUITE 6300			PAPER NUMBER	
SEATTLE, WA 98104-7092			2613	

8
DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,940

Applicant(s)

ROVATI ET AL.

Examiner

Nhon T Diep

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-46, 48 and 49 is/are rejected.
- 7) ☒ Claim(s) 47 and 50 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5, 3/27/2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Art Unit: 2613

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 6, 8-9 and 11 recites the limitation "said " in "said respective memory"; and line 13 "said" in "said retrieved data". There are insufficient antecedent basis for these limitations in the claim. It is suggested that "said respective address" is changed to read --said respective memory address--; and "said retrieved data" is changed to read --said macroblock data--

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 10, 12, 16-17, 42, 43 and 45-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Bard et al (EP 0 778 698) cited by the applicants.

Bard et al discloses a method and apparatus for fine motion estimation in digital video pictures comprising the same coprocessor circuit for processing image data in digital form (figure 1), including: a motion vector controller block for generating, starting

Art Unit: 2613

from said image data, motion vector values including predictor data and macroblock data relating to a current macroblock of said image data to be estimated, said prediction data and macroblock data being adapted to be stored at respective memory addresses (col. 6, ln. 42-54 and col. 7, ln. 5-9), an address generator block for extracting said respective (memory) addresses from said motion vector values, a predictor fetch block for retrieving said predictor data based on respective (memory) addresses extracted by said address generator block (col. 9, ln. 52-56), a current macroblock fetch and distengine block for retrieving said macroblock data based on respective (memory) addresses extracted by said address generator block and for processing said macroblock data according to a given function, and a decision block for collecting said retrieved (macroblock) data as partial results and selecting the best result therefrom (col. 10, ln. 42 – col. 11, ln. 5) as specified in claims 1 and 45; wherein said motion vector controller block is implemented as a DSP (col. 4, ln. 49-52, col. 11, ln. 6-26) as specified in claim 2; wherein the motion vector controller block is arranged to run a microcode (col. 4, ln. 49-52, col. 11, ln. 6-26) as specified in claim 3; wherein the motion vector controller block has associated therewith a memory, preferably of the flash type for storing said microcode (fig. 3, el. 380, 410, 420) as specified in claim 4; wherein the circuit is arranged to perform two distinct estimation steps, namely a coarse search and a fine search, respectively, of said image data, said estimation steps being carried out in parallel on different macroblocks (fig. 1, el. 201-220 and 201-230 and col. 6, ln. 42-54) as specified in claims 5 and 46; the circuit includes time-sharing hardware resources to generate in parallel the result of the coarse search for a macroblock and the result of

Art Unit: 2613

the fine search for another macroblock (201- H-220-221 and 201-G-230-231 shows parallel result) as specified in claim 6; wherein the motion vector controller block is arranged to perform at least one ancillary function selected from the group consisting of scene change detection, inverse 3/2 pull down, interlace/progressive content detection, f code adaptation (col. 3, ln. 44-59) as specified in claim 10; wherein the motion vector controller block includes a local memory adapted to receive slices of said motion vectors (fig. 3, el. 380, 410, 420) as specified in claim 12; wherein the predictor fetch block has associated therewith an internal memory managed as a cache memory (fig. 1, el. 202) as specified in claim 16; wherein the predictor fetch block loads the search windows pixels of said image data selectively and/or buffers them in said internal memory by dynamic allocation (col. 9, ln. 33059 and notice that the examiner treats "and/or" as or only) as specified in claim 17; the decision block performs decision of the macroblock coding type sequentially or in parallel with respect to motion estimation (fig. 3, el. 310-330 and 340-330 and col. 10, l. 42-46) as specified in claim 42; and the circuit is formed on a monolithic integrated circuit substrate (col. 3, ln. 16-25) as specified in claim 43.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bard et al.

Art Unit: 2613

As applied to claim 1 above, it is noted that Bard et al further disclose the comparison of pixel data of the reference block and the pixel data of the reconstructed macro block will produce a distortion value, however, Bard et al does not particularly disclose the fetch and distengine block applies, as the given function, the mean absolute error over a given macroblock of the sum of absolute differences produced by pixel comparison as specified in claim 33. The examiner takes Official Notice that the calculation of distortion error using the mean absolute error over a given macroblock of the sum of absolute differences produced by pixel comparison is well known in the pertinent art and therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of bard et al by using the mean absolute error over a given macroblock of the sum of absolute differences produced by pixel comparison to obtain a distortion error. Doing so would help to produce better results.

Claims 14 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bard et al, in view of Girardeau, Jr. (US 5,487,024)

As applied to claims 1 and 45 above, it is noted that Bard et al does not particularly disclose the address generator block is arranged to output the addresses required to fetch said predictor data in sequential cycles. Girardeau, Jr., teaches "If an operation is in progress in which accesses from both data paths are sought in a single memory portion, but to different addresses, it is of course necessary to provide the data in sequential cycles (as previously illustrated between t2 and t3 in FIG. 2) (col. 5, ln. 4-8). Therefore, it would have been obvious to one of ordinary skilled in the art at the time

Art Unit: 2613

the invention was made to modify the system of Bard et al by outputting the addresses required to fetch said predictor data in sequential cycles as taught by Girardeau, Jr.

Doing so would help to access from multiple data paths.

Allowable Subject Matter

Claims 47 and 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Purcell et al (US 5,630,033) discloses an adaptic threshold filter and method thereof.

b. Yu (US 5,910,824) discloses a frame memory for a motion picture decoder.

c. Boon (US 6,360,014) discloses an image decoding method, image decoding apparatus, and data recording medium.

d. Zuccaro et al (US 6,456,659) discloses a motion estimator algorithm and system architecture.

e. Fimoff et al (US 6,504,872) discloses a down conversion decoder for interlace video.

f. Taylor et al (US 6,518,974) discloses a pixel engine.

Art Unit: 2613

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhon T Diep whose telephone number is 703-305-4648.

The examiner can normally be reached on m-f.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S Kelley can be reached on 703 305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ND
24 Sept 2004

A handwritten signature in black ink, appearing to read 'DhNhon', is written over a horizontal line.

**NHON DIEP
PRIMARY EXAMINER**